AC 29-55785

AMAX Phosphate, Inc.
A SUBSIDIARY OF AMAX INC.
402 SOUTH KENTUCKY AVENUE · SUITE 600 · LAKELAND, FLORIDA 33801 · (813) 687-2561

May 26, 1982

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JUN 01 1982
B.O.A.Q.

Mr. Willard Hanks
Bureau of Air Quality Management
Florida Department of Environmental Regulation
Twin Towers Office Building
2600 Blair Stone Road
Tallahassee, Florida 32301

Dear Mr. Hanks:

As agreed in our telephone conversation of May 20, 1982, I am responding to your questions concerning a construction permit application recently submitted for the AMAX Plant City Feed Preparation Wet Scrubber #2.

The first question involved the allowable emissions level for the new wet scrubber, as well as the allowable emissions for the existing wet scrubber (AMAX Plant City Feed Preparation Wet Scrubber #1), which is being operated under FDER permit number A029-6315. The combined emissions of the existing wet scrubber and the new wet scrubber will not exceed the current allowable emissions for the wet scrubber #1 or 34.57 lbs./hour particulate. The allowable particulate emissions for the new wet scrubber should be set at 6.8 lbs./hour. This emissions rate, based on 7,280 hours per year, will not exceed the PSD significance level for particulate and will allow for operational variations. Historically, most pollution abatement devices fluctuate in their operational efficiencies due to process problems, flow restrictions, and materials buildup. Even the most diligent maintenance program cannot assure that a pollution collection device will meet the optimum manufacturer's specifications at all times. Therefore, it is realistic to establish a permitted emission rate with enough margin to allow for the variations that occur in actual production situations. The allowable emissions rate of 6.8 lbs./hour was chosen for this unit to provide this needed operational margin.

When the operating permit application for the Feed Preparation Wet Scrubber #2 is submitted to your department, the permitted allowable particulate emissions from Feed Preparation Wet Scrubber #1 (A029-6315) will be reduced from the present 34.57 lbs./hour to 27.57 lbs./hour or a reduction of 7 lbs./hour. Please note that this particulate emissions allocation will result in a net decrease in the allowable emissions from the facility.

The second question you asked included the possible emission of ozone and volatile organic compounds. The only combustion source in the Feed Preparation Facility is the feed dryer which will be vented through the existing wet scrubber #1. There are no combustion sources vented through the new wet scrubber #2 and there are no organic solvents used in the feed preparation process. Therefore, it is reasonable to assume that there will be no ozone or volatile emissions from the feed preparation wet scrubber #2.

The third question involved operational data for the new venturi scrubber. Specifically, you requested the water header pressure range, the pressure drop range across the venturi, and the venturi water volume range. This information is as follows:

Pressure Drop Across the Venturi:	13 - 17" WG
Water Header Pressure Range:	110 - 130 PSIG
Water Volume to the Venturi:	150 - 190 GPM

If after reviewing this material, you find you have questions or need additional information, please let me know.

Sincerely,

Fred G. Mullins
Regulatory Compliance Manager

FGM/rit

cc: Jack Lewis
Dan Williams
Ivan Choronenko
John Cladakis
George Townsend

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1 PTPLU VERSI_ 80021: TOM PIERCE AND BR_ TURNER :  ENVIRONMENTAL OPERATIONS BRANC_
 AMAX INC. --PLANT CITY
0 OPTIONS    1=YES USE THE OPTION    0=NO DO NOT USE THE OPTION
 IOPT(1) = 0 (COMPUTE GRADUAL PLUME RISE)          AMBIENT AIR TEMP = 293.00(DEG,K)
 IOPT(2) = 0 (COMPUTE STACK DOWNWASH)              WIND EXPONENTS =  .10   .15   .20   .25   .30   .30
 IOPT(3) = 0 (COMPUTE INITIAL PLUME SIZE)          ANEMOMETER HT =  7.00 (METERS)
           IF =1 USE PASQUILLS RECOMMENDATION
0                              SOURCE PARAMETERS
 EMISSION RATE =      .68(G/SEC)                   PHYSICAL STACK HEIGHT =    30.48(METERS)
 STACK TEMP =  316.00(DEG,K)                       STACK EXIT VELOCITY =    15.09(M/SEC)
 STACK DIAM =    .91(METERS)                       VOLUME FLOW =     9.81(CU M/SEC)
 MIXING HT =  1500.0(METERS)                       RECEPTOR HT =    0.00(METERS)


  ANALYSIS OF CONCENTRATION AS A FUNCTION OF STABILITY AND WIND SPEED
0                                                          ****EXTRAPOLATED WINDS****
 STABILITY   WIND SPEED   MAX CONC    DIST OF MAX   PLUME RISE     WIND SPEED   MAX CONC    DIST OF MAX   PLUME RISE
               (M/SEC)    (G/CU M)       (KM)         (M)          (M/SEC)    (G/CU M)       (KM)         (M)
    1            .50   2.0954E-05        .463        112.9            .58   2.1211E-05        .436        101.6
    1            .80   2.1468E-05        .372         82.0            .93   2.1457E-05        .349         74.9
    1           1.00   2.1380E-05        .338         71.7           1.16   2.1094E-05        .319         66.0
    1           1.50   2.0250E-05        .285         57.9           1.74   1.9597E-05        .270         54.2
    1           2.00   1.8832E-05        .258         51.1           2.32   1.7959E-05        .240         48.3
    1           2.50   1.7481E-05        .245         47.0           2.90   1.6481E-05        .225         44.7
    1           3.00   1.6230E-05        .222         44.2           3.48   1.5144E-05        .214         42.3
0                                                          ****EXTRAPOLATED WINDS****
 STABILITY   WIND SPEED   MAX CONC    DIST OF MAX   PLUME RISE     WIND SPEED   MAX CONC    DIST OF MAX   PLUME RISE
               (M/SEC)    (G/CU M)       (KM)         (M)          (M/SEC)    (G/CU M)       (KM)         (M)
    2            .50   1.6807E-05        .784        112.9            .62   1.7902E-05        .680         96.6
    2            .80   1.8790E-05        .586         82.0           1.00   1.9189E-05        .519         71.8
    2           1.00   1.9192E-05        .518         71.7           1.25   1.9178E-05        .464         63.5
    2           1.50   1.8845E-05        .427         57.9           1.87   1.8157E-05        .379         52.5
    2           2.00   1.7902E-05        .368         51.1           2.49   1.6841E-05        .338         47.0
    2           2.50   1.6828E-05        .338         47.0           3.12   1.5495E-05        .314         43.7
    2           3.00   1.5742E-05        .318         44.2           3.74   1.4260E-05        .298         41.5
    2           4.00   1.3787E-05        .293         40.8           4.99   1.2201E-05        .278         38.7
    2           5.00   1.2384E-05        .278         38.7           6.23   1.0613E-05        .266         37.1
0                                                          ****EXTRAPOLATED WINDS****
 STABILITY   WIND SPEED   MAX CONC    DIST OF MAX   PLUME RISE     WIND SPEED   MAX CONC    DIST OF MAX   PLUME RISE
               (M/SEC)    (G/CU M)       (KM)         (M)          (M/SEC)    (G/CU M)       (KM)         (M)
    3           2.00   1.8073E-05        .562         51.1           2.68   1.6729E-05        .499         45.8
    3           2.50   1.7107E-05        .513         47.0           3.36   1.5375E-05        .463         42.8
    3           3.00   1.6082E-05        .480         44.2           4.03   1.4136E-05        .439         40.7
    3           4.00   1.4179E-05        .440         40.8           5.37   1.2070E-05        .409         38.2
    3           5.00   1.2583E-05        .415         38.7           6.71   1.0483E-05        .391         36.6
    3           7.00   1.0191E-05        .388         36.4           9.39   8.2615E-06        .370         34.9
    3          10.00   7.8811E-06        .367         34.6          13.42   6.2461E-06        .355         33.5
    3          12.00   6.8566E-06        .359         33.9          16.11   5.3678E-06        .349         33.0
    3          15.00   5.6980E-06        .351         33.2          20.13   4.4306E-06        .343         32.5
0                                                          ****EXTRAPOLATED WINDS****
 STABILITY   WIND SPEED   MAX CONC    DIST OF MAX   PLUME RISE     WIND SPEED   MAX CONC    DIST OF MAX   PLUME RISE
               (M/SEC)    (G/CU M)       (KM)         (M)          (M/SEC)    (G/CU M)       (KM)         (M)
    4            .50   8.2040E-06       3.504        112.9            .72   1.0563E-05       2.402         87.5
    4            .80   1.1162E-05       2.169         82.0           1.16   1.2963E-05       1.552         66.1
    4           1.00   1.2337E-05       1.759         71.7           1.44   1.3655E-05       1.299         59.0
    4           1.50   1.3735E-05       1.263         57.9           2.17   1.3911E-05       1.000         49.5
    4           2.00   1.3968E-05       1.038         51.1           2.89   1.3021E-05        .946         44.7
    4           2.50   1.3576E-05       1.000         47.0           3.61   1.1983E-05        .872         41.9
    4           3.00   1.2860E-05        .932         44.2           4.34   1.1022E-05        .824         40.0
    4           4.00   1.1453E-05        .844         40.8           5.78   9.4173E-06        .763         37.6
    4           5.00   1.0230E-05        .791         38.7           7.22   8.1795E-06        .728         36.2
    4           7.00   8.3504E-06        .742         36.4          10.11   6.4445E-06        .687         34.6
    4          10.00   6.4983E-06        .689         34.6          14.45   4.8705E-06        .658         33.3
    4          12.00   5.6012E-06        .672         33.9          17.33   4.1848E-06        .646         32.9
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4	12.00	5.6512E-06	.672	33.9	17.33	4.1848E-06	.646	32.7
4	15.00	4.7222E-06	.655	33.2	21.67	3.4533E-06	.634	32.4
4	20.00	3.7026E-06	.638	32.5	28.89	2.6728E-06	.623	31.9

0

STABILITY	WIND SPEED (M/SEC)	MAX CONC (G/CU M)	DIST OF MAX (KM)	PLUME RISE (M)	****EXTRAPOLATED WINDS**** WIND SPEED (M/SEC)	MAX CONC (G/CU M)	DIST OF MAX (KM)	PLUME RISE (M)
5	2.00	6.6310E-06	2.511	61.3	3.11	5.1273E-06	2.215	57.1
5	2.50	5.8326E-06	2.354	59.1	3.89	4.4785E-06	2.087	55.2
5	3.00	5.2383E-06	2.237	57.4	4.66	3.9994E-06	2.000	54.7
5	4.00	4.4002E-06	2.071	54.9	6.22	3.3157E-06	1.958	51.6
5	5.00	3.8268E-06	2.000	53.2	7.77	2.8523E-06	1.867	50.1

0

STABILITY	WIND SPEED (M/SEC)	MAX CONC (G/CU M)	DIST OF MAX (KM)	PLUME RISE (M)	****EXTRAPOLATED WINDS**** WIND SPEED (M/SEC)	MAX CONC (G/CU M)	DIST OF MAX (KM)	PLUME RISE (M)
6	2.00	5.7040E-06	4.543	56.1	3.11	4.4331E-06	3.951	52.6
6	2.50	5.0312E-06	4.227	54.2	3.89	3.8779E-06	3.698	51.0
6	3.00	4.5275E-06	3.994	52.8	4.66	3.4695E-06	3.510	49.8
6	4.00	3.8130E-06	3.667	50.8	6.22	2.8935E-06	3.246	48.0
6	5.00	3.3226E-06	3.443	49.3	7.77	2.5026E-06	3.065	46.7

0 (1) NO COMPUTATION WAS ATTEMPTED AS THE DISTANCE TO THE POINT OF MAXIMUM CONCENTRATION IS SO GREAT THAT THE SAME STABILITY IS NOT LIKELY TO PERSIST LONG ENOUGH FOR THE PLUME TO TRAVEL THIS FAR.

0 (2) THE PLUME IS OF SUFFICIENT HEIGHT THAT EXTREME CAUTION SHOULD BE USED IN INTERPRETING THIS COMPUTATION AS THIS STABILITY TYPE MAY NOT EXIST TO THIS HEIGHT, ALSO WIND SPEED VARIATIONS WITH HEIGHT MAY EXERT A DOMINATING INFLUENCE.

0 (3) NO COMPUTATION WAS ATTEMPTED FOR THIS HEIGHT AS THE POINT OF MAXIMUM CONCENTRATION IS GREATER THAN 100 KILOMETERS FROM THE SOURCE.

EOI ENCOUNTERED.

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Amax, Inc. — Plant City

Feed Prep Plant / New Addition

Stack Parameters

Height - 100 feet 30.48 m
gas flow rate - 21,000 ACFM
Water Content - 8.25 %
Internal Diameter - 3.0 feet 0.91 m
Gas Exit Temperature - 110°F 316 K
Velocity - 49.5 feet per second 15.09 m/s

Emission - 6.8 / 5.4 pound per hour particulate matter
0.68 g/s

What is maximum impact?

$\left(\frac{6.8}{5.4}\right)$ 0.4 21,45 = 10.8 $\mu g/m^3$

Annual Concentration

To: Bill Thomas
From: Willard Hanks
Date: May 21, 1982
Subject: AMAX Phosphate, Inc. – Applicability

Amax presently uses one scrubber to control the emissions from a dryer, mixer and pug mill at their feed preparation unit in Plant City. A conveyor in the feed preparation unit is uncontrolled.

The Company proposes to continue to control the emissions from the dryer with the existing scrubber but install a new scrubber to control the emissions from the existing mixer, pug mill and conveyor. The actual particulate matter emissions from the new scrubber will be less than 25 TPY.

The proposed project is not subject to pre-construction review under federal regulations, 40CFR 52.21 because the potential increase in emissions of all criteria pollutants resulting from the modification are less than the significant levels.

The project is subject to preconstruction review under provisions of Chapter 403, Florida Statutes, and Chapter 17-2, Florida Administration Code.

The project is in an area designated non-attainment for ozone, attainment for particulate matter but in the area of influence of the Hillsborough County particulate matter nonattainment area, and unclassified for sulfur dioxide.

As the new scrubber is not a source of VOC or sulfur dioxide, regulations of these pollutants are not applicable.

As the increase in particulate matter emissions is less than the significant level, the modification is not subject to PSD review under section 17-2.500(2)(d)4.

Based on BAQM modeling experience, the maximum particulate matter emissions from the new scrubber will not have a significant impact on the Hillsborough County particulate matter nonattainment area. Therefore, the modification is exempt from the RACT regulations, 17-2.650(2).

The conveyor being controlled by the new scrubber is a source of unconfined emission of particulate matter and subject to 17-2.610(3). The scrubber and emissions proposed by the Company are acceptable to the Department as reasonable controls. Must install reasonable control per regulation

STATE OF FLORIDA

DEPARTMENT OF ENVIRONMENTAL REGULATION

TWIN TOWERS OFFICE BUILDING
2600 BLAIR STONE ROAD
TALLAHASSEE, FLORIDA 32301

BOB GRAHAM
GOVERNOR

VICTORIA J. TSCHINKEL
SECRETARY

May 14, 1982

Mr. Fred G. Mullins
Regulatory Compliance Manager
AMAX Phosphate, Inc.
402 South Kentucky Avenue, Suite 600
Lakeland, Florida 33801

Dear Mr. Mullins:

This is to acknowledge receipt of your application for a new wet venturi scrubber to be located at the AMAX Plant City facility. Your receipt for the $20.00 processing fee is attached. The permit processing number is AC 29-55785. Please refer to this number on future correspondence.

If we may be of further assistance, please feel free to call at (904)488-1344.

Sincerely,

Patty Adams
Bureau of Air Quality Management

pa

Attachment

cc: Mr. J. J. Lewis

AMAX Phosphate, Inc.
A SUBSIDIARY OF AMAX INC
402 SOUTH KENTUCKY AVENUE · SUITE 600 · LAKELAND, FLORIDA 33801 · (813) 687-2561

MAY 14 1982

AQM

May 11, 1982

D.E.R.
MAY 12 1982
SOUTHWEST DISTRICT
TAMPA

Mr. Dan Williams
Air Permitting
Southwest District
Department of Environmental Regulation
7601 Highway 301 North
Tampa, Florida 33610

Dear Mr. Williams:

Please find attached a copy of a Construction Permit Application for a new wet venturi scrubber to be located at the AMAX Plant City Facility. This scrubber will serve the Plant City Feed Preparation Unit and will control the emissions from the feed mixer, pugmill, and vibrating pan conveyor. The emissions from the feed mixer, pugmill, and dryer are presently being vented through another wet venturi scrubber operating under FDER permit number AO29-6315. Upon completion of the new wet scrubber (Feed Preparation wet scrubber #2), only the dryer will be vented through the existing wet scrubber (Feed Preparation wet scrubber #1); and Operating Permit AO29-6315 will be modified to reflect these changes.

The additional 21,000 cfm of airflow provided by the new wet venturi scrubber should capture any unconfined emissions that would escape the present wet scrubber system.

This installation, along with the two new baghouse units already under construction, will complete the Plant City Feed Preparation unconfined emissions control project.

If you have any questions concerning these permit applications, please let me know.

Sincerely,

Fred G. Mullins
Regulatory Compliance Manager

FGM:la

Attachment

cc: (with attachment)
Mr. Ivan Coroneko

(without attachment)
Ms. Rhea Law
Mr. J. J. Lewis
Mr. G. Townsend

DEPARTMENT OF ENVIRONMENTAL REGULATION

ROUTING AND TRANSMITTAL SLIP

ACTION NO.

ACTION DUE DATE

1. TO: (NAME, OFFICE, LOCATION) Clair Fancy	INITIAL	
	DATE	
2.	INITIAL	
	DATE	
3.	INITIAL	
	DATE	
4.	INITIAL	
	DATE	

RE: AMAX Phosphates

REMARKS:

attached is another construction permit in the unconfined particulate reduction program.

Have the permit processing engineer call me if you need any history on the existing system.

INFORMATION	
	REVIEW & RETURN
	REVIEW & FILE
	INITIAL & FORWARD
DISPOSITION	
	REVIEW & RESPOND
	PREPARE RESPONSE
	FOR MY SIGNATURE
	FOR YOUR SIGNATURE
	LET'S DISCUSS
	SET UP MEETING
	INVESTIGATE & REPT
	INITIAL & FORWARD
	DISTRIBUTE
	CONCURRENCE
	FOR PROCESSING
	INITIAL & RETURN

FROM: Dan A Williams

DATE 5-12-82

PHONE

TO: Ed Palagyi

FROM: Willard Hanks WMH

DATE: April 16, 1982

SUBJECT: Amax Phosphate, Inc.

During the test burn of COM fuel at Amax Phosphate, the emissions of particulate matter and sulfur dioxide were measured. The correspondence that was sent to you stated the two pollutants were measured simultaneously. EPA allows this simultaneous test procedure in Method 6, 40 CFR 60 Appendix A, but it is specifically prohibited by DER regulations (Chapter 17-2.700(6)(a)6.). Thus, the emission data collected during the test burn cannot be used for determination of compliance with Florida regulations.

If Amax wants to test for particulate matter and sulfur dioxide simultaneously for compliance verification with State regulations, they will have to obtain a waiver from DER Method 6 by the procedure described in Chapter 17-2.700(3), Exceptions and Approval of Alternate Procedures and Requirements. To obtain the waiver, Amax Phosphate would have to furnish data showing a correlation between the emission measured by the official and proposed test methods. I understand that the Company has some data that could be used for this study. If Amax makes a comparison of the two test methods, the Department should try to obtain a copy of the calculations and results.

Test data sent to you by Amax listed sulfuric acid mist concentration (including SO_3) as 0. The only reference method that measures SO_3 is the sulfuric acid plant test procedure, Method 8. It uses alcohol to trap SO_3. If the alcohol is contanimated, it can also trap SO_2 and, for that reason, should only be used when SO_3 emissions are required. Environmental personnel at Amax told me alcohol was not used in the test they reported to you.

Amax should also be testing for NO_x during the test burn as COM fuel may cause a significant emission increase (40 TPY) of this pollutant. Any modification that causes a significant emission increase of a criteria pollutant is subject to state and federal PSD regulations.

CC: Fred Mullins